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Improving performance in business development

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SUMMARY

The objective of this study was to design an assessment tool that would provide relevant, reliable and valid management information for business development teams, in order to increase the product performance. This new assessment tool, called "Genesis", which refers to the creation of a new "thing". The literature in the field suggests that the success or failure of business development projects is within the control of managers (Calantone et al, 1996; Montoya-Weiss and Calantone, 1994). The analysis of a large number of success and failure studies (cf. Rothwell et al, 1974; Montoya-Weiss and Calantone, 1994) has resulted in four important control constructs which can be used by managers for business development projects: company, team, product and market. However, based on the high number of terminated business development projects (cf. Booz-Allen and Hamilton, 1968; 1982) and the high failure rate of new products (cf. Stevens and Burley, 1997), it is apparent that managers are encountering difficulties in controlling business development projects.

An analysis of this high failure rate in conjunction with the systems theory of control (De Leeuw, 1982; 1990) suggests that there is a gap between the amount of information required to perform the control task and the amount of information already possessed (Galbraith, 1971). Support is therefore needed to improve the amount of business development information for the projects, both during the initiation phase and during the complete development process (Gerstenfeld, 1976; Stuckenbruck, 1986; EIRMA, 1995). The new Genesis assessment tool focuses on delivering the required information to project managers about key factors related to a business development project. Based on several studies (Bretschneider, 1993; EIRMA, 1995; Nijssen and Frambach, 2000), it has been concluded that assessment tools for business development utilising a quantitative-subjective methodology (cf. Werner and Souder, 1997) in conjunction with learning capabilities could deliver the required information with the highest sophistication level and increase the possibilities of controlling the project during the development process (EIRMA, 1995). An important side-effect of utilising this type of assessment tool is that usage increases and it aids in structuring the internal communication within the team (Paolini and Glaser, 1977; Davis, 1993). In addition to assessing the project with the Genesis tool and signalling the project's strengths and weaknesses, the resulting increase in communication between team members directly raises the chances of success (cf. Rothwell et al, 1974).

RESEACH OBJECTIVE

The aim of this study is to enhance the controlling power of business development teams by providing relevant, reliable and valid management information using a quantitative-subjective methodology. This supports the decision-making process

and the continuous monitoring process or ongoing project evaluation of business development projects (Crawford, 1986; Stuckenbruck, 1986). The final goal is to increase the product performance. With this goal in mind, the term "performance" must be clearly defined and rendered operational in measurable terms. This is formulated in the first question: How can the performance of business development projects and their products be measured? Secondly, the factors over which the project management can exert control during the development process must be identified. This aspect is formulated in the question: What are the relevant factors under the control of the project team and/or higher management that influence the performance of business development projects? The answers to these two questions form the basis for the new assessment tool. These factors will be measured and the answers are linked to the performance measures used to create the new Genesis assessment model.

The influence of communication on performance has been demonstrated by several studies (Allen, 1971; Katz, 1982; Dougherty, 1992). By using the average and standard deviation scores for each factor in the new model, four team communication concepts were defined and measured: optimistic, consensus, confidence and integrated. These can be used by the project leader or by management to control or influence the business development team. This additional tool for measuring the level of communication between team members is referred to as the team monitor tool. The question posed earlier in the study was whether it is possible to link these four concepts to performance measures. Finally, as stated in the research objective, the information provided should be reliable and valid. This is required to fulfil Simon's second requisite (Simon, 1969) that one should have reliable data about the initial conditions of the system, which is also the minimum requirement for effective control (De Leeuw, 1994). Since reliability is a prerequisite for validity (Aiken, 1994), reliability was first statistically tested using Cronbach's alpha (Cronbach, 1951). The validity of the new Genesis tool and the NewProd tool (Cooper, 1985, 1992), which shares some traits with Genesis, were tested using three different types of validity: 1) internal, 2) external and 3) construct. This was formulated in the fourth question: What is the validity of the NewProd and Genesis product assessment tool? These four questions are answered based on the following methodology used in reaching the objective of this study.

METHODOLOGY

The methodology used mainly follows the design cycle described by Van Strien (1986) because the aim of this study is to develop knowledge that can be applied to real-life situations. After defining the design objective, the specifications

(demands and wishes) for the new tool were defined based on previous studies (cf. Campbell and Stanley, 1963; Bronnenberg and Engelen, 1988; Montoya-Weiss and Calantone, 1994; EIRMA, 1995; Muller, 1999). However, before a quantitative-subjective assessment model could be created, empirical data was needed. For this part of the study, the empirical research cycle (Van Engelen and Van der Zwaan, 1994) with the following three phases was used: empirical design, data collection and data analysis. The data was collected using questionnaires for which every variable was transformed into a measurable statement. With the help of these statements, the opinions of the team members were captured in figures and used for further statistical analysis. Unlike many previous studies (see e.g. Montoya-Weiss and Calantone, 1994) which used a retrospective methodology, and thus compromising the internal validity of a study (Montoya-Weiss and Calantone, 1994), this study collected real-time data in running business development projects; this is a longitudinal approach which improved the internal validity of the study (cf. Miller et al, 1997; Boulding et al, 1997; Schmidt and Calantone, 1997). The quantitative-subjective data collected was used to generate several alternative statistical models for the new assessment tool. These models were assessed for effectiveness and efficiency and were later compared to the specifications and the research objective to improve the controlling power.

RESULTS

An independent performance score for each project assessed was necessary in order to generate new assessment models based on longitudinally collected data. However, performance (or success) is a difficult term to define and is complex to measure (cf. Stuckenbruck, 1986; Freeman and Beale, 1992). Therefore, seven performance measures (cf. Shenhar et al, 1997; Brown and Wilson, 1993) were used to create three generally accepted performance factors: project performance, product performance, and future performance. The relative importance of performance is time-dependent (cf. DeCotiis and Dyer 1977; Wit, 1988). However, these three performance factors cover the whole time spectrum (Shenhar et al., 1997). These three performance factors were measured simultaneously during the assessment of the business development project. At the end of the study, the performance of each project assessed was measured for a second time to ensure an independent and objective performance score. The performance measures were tested for reliability using Cronbach's alpha (Cronbach, 1951). Since all Cronbach alphas were higher than 0.75 for each performance construct using the data collected at the end of this study, the integrity of the constructs is good (Nunnally, 1978).

Based on an extensive study of the literature, experts, experience, logical reasoning and intuition, the following four control constructs were identified: company, team, product and market. For each construct, three of the most relevant factors for business development projects factors were defined. Each factor was measured using several variables, which were transformed into 73 statements (the research questionnaire). The Genesis survey instrument was pre-tested using experts, interviews, and pilot projects. After the data was collected (resulting in a knowledge base of 44 business development projects and 311 respondents), the factors were assessed for reliability using Cronbach's alpha (Cronbach, 1951). Every factor in the Genesis model had to have a Cronbach's alpha score greater than 0.70 in order to be acceptable (Nunnally, 1978). The 12 factors were reviewed to reduce the number of variables from 73 to a maximum of 48 (see Cooper, 1992). This resulted in 9 reliable and usable factors with 46 variables, which were then used to design the new Genesis assessment tool.

Using the previously reassessed Genesis factors, the four suppositions regarding the team communication: optimistic, consensus, confidence and integrated, were tested for their the performance scores. These suppositions were measured using the average and standard deviation scores for every factor. The Mann-Whitney test was used to verify whether there were significant differences between the scores of the terminated projects (n=7) and the projects that introduced a product onto the market (n=6). For the suppositions "optimistic" and "consensus", no statistically significant differences were found between failed and successful projects. The supposition "integrated" was only confirmed for the product construct and not for the other three constructs. If the team had a relatively low standard deviation on the certainty scale, the probability of success was higher. However, the team control measure "confidence" indicated a significantly different score for six Genesis factors. These results partly confirm the assumption that business development teams which are confident about their views towards the product, the market, and the company have a higher probability of achieving success, i.e. introducing a product to the market. Therefore, the application of the confidence score is a useful measure for differentiating between successful and unsuccessful projects.

The aspect of validity: the question "Does the instrument measure what it is intended to measure?" was asked of the Genesis tool and NewProd tool (Cooper, 1985). Both tools were checked against three validity types: internal, external and construct validity (Cook and Campbell, 1979). Finally, the predictive validity (i.e. the reliability of the predictions made with the tool) was also tested. The Genesis tool complies with every validity aspect: 1) the internal validity was assured by using a longitudinal (or a-priori) methodology of data collection, 2) the findings of this study can be generalised (external validity) because data was collected at four companies, and 3) the construct validity was checked by several

knowledgeable professionals, individually questioning the respondents in the pilot cases, generating several regression models and comparing the Genesis score with the NewProd score. Additionally, a longitudinal case illustrated that the Genesis factors in the model clearly identify the strengths and weaknesses during the development process, and changes in the project were clearly reflected in the factor scores. This was the first indication that the new model possesses consistency and precision.

The internal validity of the NewProd tool was not fulfilled, which means that the differences observed in the study cannot be unambiguously attributed to the study, but rather to other factors (Campbell and Stanley, 1963). NewProd complies with the demands for external validity. The construct validity results appear correct. However, these results are open to question because they are based on a biased data set with a bi-modal distribution. The question of whether the NewProd tool measures what it is intended to measure was tested using the team construct; based on a polarity study (Van Engelen et al, 1999; Van Engelen et al, 2002), the assumption was made that NewProd does not measure the product performance but rather the performance of the team. Significant positive correlations were found between the NewProd performance score and the three team factors. This is an indication that NewProd measures certain team aspects and does not measure, as originally intended, the financial performance of the product. Finally, the predictive validity of both tools was tested against the product performance factor measured at the end of the study. The classification of the project (terminated or market) was used to determine the predictive validity score. NewProd correctly classified six of the thirteen projects; this represents a predictive validity score of approximately 46%. However, the new Genesis model had a predictive validity score of 77%: it correctly classified ten of the thirteen finished projects. Based on these results, it is concluded that the new Genesis model fulfils the requirements to deliver valid information.

GENESIS

Based on the answers to the four research questions, it was possible to achieve the research objective: to design an assessment tool in order to increase the product performance by providing relevant, reliable and valid management information to enhance the controlling power of business development teams. The data collected was used to generate several models: a statistically sound model, a model based on the four control constructs, and a model based primarily on the theory. Based on the satisfycing principle (Simon, 1969), the model that was good enough or satisfying enough was selected, that is, the theoretical model. This model was selected because 1) it improved the controlling power of the project by utilising

five reliable control factors, 2) it is applicable at the project level, 3) it has the highest effectiveness, 4) it has an acceptable predictive validity of 77%, 5) it seems to comply best with the usability specification, and 6) the model can also be used for the team monitor tool. The new Genesis assessment tool determines the probability of success (potential performance score) based on the following five factors: 1) project-company fit, 2) project team, 3) product aspect, 4) market competition, and 5) market environment. The first two factors have the largest influence in the Genesis model on the potential performance score. Therefore, projects that fit with the present company's competences (known product type, satisfy known customer's needs, known potential customers, known technology needed, known production process, known distribution system, known advertising and known competitors) and where the business development team works as a team (team members want to participate again in the team, members understand the potential problems, there is a open team communication, members collect knowledge for each other and the members are satisfied with development process) have the highest probability of realising a successful business development project. Furthermore, the project leader and the management can control and influence these aspects. Finally, it is recommended that business development projects be regularly assessed, certainly before each business gate, and this assessment process should continue until the market introduction phase.

Genesis improves communication between the various functions within a business development project by delivering relevant, reliable, and valid information regarding several important business development factors and by identifying the information gaps in the project team. This information is based on an existing knowledge base, which has the potential to be customised to fit with company-specific aspects. By presenting the strengths and weaknesses of the business development project, Genesis initiates an open discussion between the team members, which under the supervision of a facilitator directly improves the internal communication and thus increases performance. Furthermore, the information is used to enhance the controlling power of business development team with regard to the product performance and it supports the *"go"* or *"no go"* decision for business development projects.